

Abstract of the Disclosure

5 Provided is a field effect transistor. The field effect transistor includes an insulating vanadium dioxide (VO_2) thin film used as a channel material, a source electrode and a drain electrode disposed on the insulating VO_2 thin film to be spaced apart from each other by a channel length, a dielectric layer disposed on the source electrode, the drain electrode, and the insulating VO_2 thin film, and a gate electrode for applying a predetermined voltage to the dielectric layer.